Program in Arms Control, Disarmament and International Security

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French and British Nuclear Forces
Implications for Arms Control

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Summary

The present size and projected growth of British and French nuclear forces in the 1990s pose serious security and arms control problems for the Soviet Union and the United States Either European nuclear power can now very likely and with more certainty in the next decade inflict intolerable damage on the Soviet Union even after absorbing an initial attack on its society As allies of the United States both have an increasing capacity to pursue strategies favorable to their preferred interests and values at the potential expense of American aims The arms control implications of the British and French nuclear systems can thus be understood in a context of multilateral deterrence as the bargaining framework within which the two European nuclear powers can be expected to assume a role either in resisting integration of their systems into the present arms control regime deriving essentially from SALT I and II or as appears progressively to be the case in working to preserve what remains of these accords and the arms process from which they have flowed

The parameters within which the two European systems are likely to be integrated within a SALT START Geneva arms control process are defined by the current and future composition of these forces the historic strategies pursued by these states in creating a desirable multilateral deterrent environment and the domestic consensus on which their nuclear capabilities and strategies rest. While both have adopted a posture of minimum deterrence towards the Soviet Union each has followed contrasting strategies in its efforts to influence and inflect American nuclear policies and practices the British preferring to integrate their policies with those of the United States within NATO the French to distance themselves from Washington within the Atlantic Alliance in order to maximimize both their independence and leverage over U S moves

In varying measure both Britain and France share several prerequisites that will have to be met before they will consider participation in superpower arms control talks (1) substantial reductions in superpower offensive nuclear forces (2) superpower acceptance of British and French forces as strategic weapons and superpower recognition of a unitary Eurostrategic and superpower nuclear balance and the concomitant multilateralization of the risk of nuclear war (3) substantial reductions in Soviet and Warsaw bloc conventional superiority as well as (add the French) chemical and biological weapons and (4) no substantial change in superpower nuclear defense capabilities

Recent trends in superpower behavior — away from a negotiated nuclear environment to a unilaterally defined framework — are creating incentives for a re thinking of British and French pre conditions for arms control participation With the possibility of significant improvements in superpower nuclear defensive capabilities London and Paris are prompted to review their empty chair positions and assume a more active role towards arms talks just to preserve rather than advance what remains of the current ragged and refracted arms control regime haltingly and erratically defined by the superpowers since the early 1970s and now under siege

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The Multilateralization of Deterrence and Arms Control

The military strategic arms control and political implications of the French and British deterrent systems can be fully understood only if viewed as a reaction to the global confrontation of the superpowers arising from World War II and the subsequent evolution of the nuclear arms race between them. The French and British systems are dedicated to the preservation of the survival and independence of their respective states and to efforts to influence the creation of an international environment congenial to their interests and values Realization of these basic national and systemic objectives depends critically on the ability of these middle range powers to manipulate their nuclear policies to shape the strategic and arms control behavior not only of the announced adversary — the Soviet Union — but also and no less vitally that of the United States the principal ally and major guarantor of European security Thanks to the impressive growth and future enlargement of British and French nuclear capabilities deterrence and arms control bargaining are now fundamentally multilateral They can no longer be considered the exclusive preserve of Moscow and Washington Superpower bilateral talks partially mask this strategic reality however much they may be justified by conjunctural needs and tactical considerations

This dual imperative of British and French nuclear policy— to influence adversary and ally — derives from the predominant but not duopolistic positions enjoyed by the superpowers in defining the global and regional security arrangements within which European political behavior must be framed. Deterring the Soviet Union is but half the problem What the United States does or does not do in extending deterrence to Europe critically affects British and French security interests and those of their European partners How American deterrence policy is executed, whether in negotiating a stable nuclear environment with the Soviet Union and with its NATO allies through arms control accords or whether it is pursued unilaterally has

fundamental implications for British and French policies and practice Any shift in U S behavior has an inevitable if not always an immediate and discernible impact on Europe s interests

British and French concern about American and Soviet security behavior would not be surprising even in the absence of nuclear weapons The formidable military power of the Soviet Union and the reliance of Western Europe on American armed might dictate strategies calculated to inflect superpower adversary and allied behavior in desirable ways Favorable security outcomes are a function of the moves of nuclear friend and common foe alike and their management of their conflict These strategic constraints logically generate incentives among European powers to control or influence the behavior of both superpowers The ally may often be as troublesome as the adversary The perceived weakness or unreliability of the United States — a sentiment so much in vogue within European policy circles during in the 1970s[1] — or its purported destabilizing behavior more recently noted by European commentators have been alternating worries in trans Atlantic relations since the inception of the Atlantic Alliance[2] Some Europeans believe furthermore that the United States is more a part of the problem of European security than a solution to it[3] Controlling Washington s behavior is thus considered as important to European policy makers especially those managing the French and British nuclear systems as responding directly to the threat posed by the Soviet Union

The destructive possibilities of nuclear weapons and the enormous striking power in Soviet and American arsenals highlight these twin tasks — as ageless as alliances between different political communities — of simultaneously positioning adversaries and allies in preferred ways The modernization of superpower nuclear forces in train which will add substantially to their capabilities gives urgency to these strategic imperatives confronting European leaders The Soviet Union s theatre nuclear forces quite apart from its long range striking power threaten all of NATO s bases and installations as well as the ground based nuclear systems of Britain and France Soviet capabilities include Backfire bombers thousands of tactical strike and air defense aircraft and surface to-air (SAM) missiles as well as SS 20 SS-4 SS 12/22 SS 23 and shorter range Scuds FROGS and SS 21 missiles some of which are based in forward positions in eastern Europe Ensuring appropriate American support to balance Soviet forces globally and regionally and to provide extended deterrence that services European interests are indispensable

ingredients of European security For the Europeans this has meant various combinations national (France and Britain) or allied through NATO of nuclear response to growing Soviet nuclear capabilities within an arms control framework tied to SALT I and II the central features of the current arms control regime that moderates the superpower arms race while keeping open the possibility of improved East West relations and detente [4]

Maintaining a balance between alliance firmness and flexibility is fundamental to the European approach to the Soviet Union and to the security role in which they would prefer to cast, and not fully successfully the United States From a European perspective a nuclear war whether initiated by the Soviet Union or incited by the United States particularly if hostilities are confined to the European continent, would be calamitous whatever or whoever was the source of the eruption Precluding Soviet aggression influencing the evolution of American nuclear strategy and arms control policies preventing a superpower arms race and war while insulating Europe from involvement in hostilities if deterrence should break down have been driving aims in the development by Britain and France of independent nuclear deterrent systems

What is of particular interest to this discussion of the arms control implications of these two systems is less their similarities than the differences between them, especially with respect to the contrasting strategies pursued by both states in their efforts to influence U S and Soviet behavior The contrast is clearest toward the United States Britain preferring to get as close to the United States as possible France as far away consistent with the need for continued access to American power on French terms The contrasting nuclear policies of Britain and France capture Europe s conflicting approach and attitude toward the United States as guarantor power whose policies appear at different times to protect and to put Europe at risk The different paths pursued by Britain and France to influence Washington s security and arms control policies reflect, if viewed as divergent tendencies of a single European response the fundamental ambiguity of European claims on American power Part of the purpose of this paper is to explore the implications of what might be characterized as a European strategy of get away closer depending on the varying and not always compatible aims and interests of the Europeans themselves particularly those of Britain and France

British and French nuclear forces those on station or being modernized are potentially powerful bargaining tools in shaping the nuclear environment, regionally and globally in prompting superpower incentives for catalytic warfare or pre emption in managing political crises and if war should erupt, in controlling escalation and facilitating war termination on terms favorable to the West As Andre Beaufre and Pierre Gallois foresaw a generation ago [5] the East West conflict has entered a period of multilateral deterrence as a direct consequence of the expansion of British and French nuclear forces For different reasons neither superpower can be indifferent to the formidable destructive power that will be wielded by London and Paris in the 1990s European nuclear forces acting independently can visit intolerable levels of human and material damage on the Soviet Union The announced strategies pursued by Britain and France and the necessarily limited range of their military and, specifically nuclear options also potentially constrains the United States in pursuing its preferred deterrence strategies in response to Soviet or Eastern bloc aggression in Europe or its strategic moves around the globe

The implications for arms control of British and French nuclear forces will be explored within a framework of analysis defined by the reluctant willingness of the nuclear parties to cooperate in bargaining over arms control regime to regulate the nuclear arms race Implied is the recognition by the nuclear states with varying degrees of clarity and commitment, that jointly defined tacit or explicit rules and a rule making process for developing and deploying nuclear systems and in conducting research and development on new systems are critical if the costs and risks of an arms race and nuclear war are to be mutually controlled. Within this frame of mind, a negotiated nuclear environment, whatever its tenuous and provisional construction is valued more than a unilaterally determined nuclear environment This assumption is essentially based on the presumably shared if not always articulated, notion by nuclear foes and friends that in the foreseeable future no state even the superpowers with their enormous resources and powerful nuclear arsenals can essentially disarm its rival and forestall a devastating counter attack These conditions define a state of mutual assured destruction (MAD) that generates incentives even between distrusting opponents to cooperate in negotiating a tolerable arms control regime [6] The limits of the negotiating framework defined by MAD are broad and indistinct. It does not automatically indicate the announced and actual strategies best suited to the needs and technological and economic resources of each

nuclear actor or the strike capabilities deployment patterns organizational structures and operating modes that they will or should adopt. These may well range from a posture of minimum deterrence to limited nuclear war

A cautionary note should also be introduced at the outset that the superpowers may well re evaluate and significantly qualify their mutual interest in a negotiated, albeit evolving arms control regime It is premature to conclude that the incentives for negotiation direct or tacit, will be fully abandoned or even that they can be abandoned given the fact that with differential weight and effect the nuclear systems of the superpowers and increasingly those of the European states hold the security interests of each state at risk Breaking off talks say in Geneva, is not the same as barring negotiations by other means and mechanisms or desisting from efforts to influence allied and adversary nuclear behavior Since no state has been able to get its full way or say there are signs that SALT I and II may be permitted to unravel or even be abrogated or substantially revised SALT II remains unratified SALT II is under seige by SDI and Soviet ABM efforts the Geneva talks appear to be getting nowhere and a nuclear test moratorium and ratification of the partial test ban treaty do not appear likely as each side gives new impetus to developing new offensive and defensive systems President Reagan s May 27 announcement that the United States will no longer be bound (though it may continue to observe) SALT II limits provides further indications of a trend toward unilateralism It may well be that the East and West are on the threshold of a new arms race uninhibited by mutual agreed upon limits [7]

The following discussion examines the implications of the British and French nuclear systems principally in light of a negotiated nuclear environment based essentially on the bargaining assumptions not necessarily the specific codicils of the SALT I and II treaties The actual details of both treaties may well be altered in the coming months and years What is important to focus on is the role that the European nuclear states are playing or might assume in incorporating their forces into a stabler multilateral deterrence system and arms control regime in preserving such a framework or in forestalling the development of a more unilaterally defined nuclear environment in which their capacity for effective autonomous initiative might be reduced or nullified. An erosion or breakdown of the current arms control regime and process bodes ill for the stability of multilateral deterrence the prospects for meaningful arms

control arrangements and reductions and the weakening of an international regime to disciple the nuclear modernization of the superpowers and the European states In such a degraded negotiating framework the expectations of cooperation in nuclear strategic policy making and arms control among allies marking NATO s two track decision of December 1979 on the deployment of U S Pershing IIs and cruise missiles in Europe will be necessarily narrowed and the superpower offensive and defensive arms race will be freed of many presently constraining limits

Unlike a bargaining framework based on negotiated arrangements a unilaterally defined arms regime is one in which no nuclear actor is inclined, implicitly or explicitly to accept or legitimate the force levels or strategies pursued by its adversary nor even necessarily those of its allies i e principally the United States in this case Under these circumstances the East West conflict would move toward a stage of pure multilateral deterrence where the distinction between ally and adversary would begin to blur and the alignments among nuclear states over strategic and arms control issues would become more fluid and less predictable Arms control would tend to be a function of the limits of the technological and economic resources that actors can or are willing to devote to the development of offensive and defensive strategic systems

Secretary of State George Schultz has suggested a growing U S inclination to move toward a unilaterally defined nuclear environment and a purer form of multilateral deterrence than has been prevalent until now in his defense of President Reagan s May 27 announcement. What we are talking about here is a shift of gears from a form of restraint under a treaty that was never ratified and was being violated for that matter and has been increasingly obsolete The President said let s shift to a form of restraint that looks at the behavior by the Soviet Union and looks at the responsibility that the United States has and its allies have for maintenance of defensive deterrent capability What we need for deterrence is a reflection of what the Soviet Union has aimed at us [8] If these considerations gain ascendancy the tasks facing British and French leaders as the discussion below suggests will be associated less with those concerned with bargaining over the terms of integrating the British and French nuclear systems into the SALT START Geneva process than with efforts aimed at preserving hard won gains to stabilize deterrence to advance arms control understandings and to reinforce the institutionalization of arms reduction negotiations as a

precondition for enlarged detente between East and West. The discussion starts with the problem of integrating British and French forces into the present arms control regime and ends with a look at of the growing incentives for London and Paris to assume initiative to preserve the regime

British and French Nuclear Systems and a Negotiated Nuclear Environment

Challenge to the Soviet Union, Current Forces

British Nuclear Systems — The current status and future prospects of British and French nuclear forces pose serious problems for Soviet leadership Table 1 sketches present British nuclear forces It is composed of four nuclear submarines each armed with 16 Polaris A3TK missiles At least one submarine is always on station and two almost always (with perhaps a six week to two-month lag) in waters off the northern coast of Great Britain [9] In a crisis with adequate political warning it is assumed that at least two and perhaps three submarines will be deployed The A3TK is a modified version of the Polaris It has a range of approximately 4700 kilometers and carries a British developed Chevaline warhead The Chevaline s composition while secret, is reportedly filled with penetration decoys and perhaps up to three 200 kiloton warheads The Chevaline qualifies as a multiple (MRV) but not MIRVed or independently targeted, re entry vehicle system since warheads impact on a defined target in close proximity of each other Despite this limitation the Chevaline marks a major improvement over the one megaton warhead of the Polaris A3 The number of available strategic warheads will have increased from 80 to perhaps 192 while warhead accuracy reliability and penetration will have been upgraded.

Chevaline consists of a Penetration Aid Carrier (PAC) which is akin to an American warhead bus capable of maneuvering in space Penetration aids have been included in the package to blind and confuse Soviet ABM radars Unable to distinguish between warheads and decoys Soviet ABM defenses will be induced to expend more ABMs to defeat Chevaline The Chevaline is deployed in space at about 12 000 mph and re enters the atmosphere at approximately the same rate of speed. This speed poses serious fire control problems for Soviet ABM units even when expanded to the SALT I limit of 100 launchers around Moscow The Soviet system comprising long range missiles aimed toward space and a new silo based

TABLE 1

FRENCH AND BRITISH STRATEGIC AND TACTICAL NUCLEAR FORCES 1985

FRANCE

STRATEGIC

Platform Mode	Delivery Mode	First Year Deployed	Launch Total	Range (km)	Throw Weight (000 lb)	Warhead Yield	CEP (m)[1]	Warhead/ Bounty Total
18 Land-based intermediate range missiles (IRBM)	S3	1980	18	3500	N A	1x1 Megaton (mg)	N A	18
5 Submarines	M-20	1977-80	80	3000	N A	1x1 Mg	N A	80
1 Submarine	M-4	1985	16	4400+	N A	6x150 kilotons (kt)	N A	96
Aircraft	Mirage[1]	1964	21	1500[1]	2 2	1xAN-22 60 kt, bomb[2]	16	75
	(with ASMP-5)	1985	1	100-300	3 0	100-150 kt [3]	19	1

TACTICAL

Ground-based	Pluton[4]	1974	44	120	N A	1x15 kt or AN-51, 25 kt	150-300	100+
Ground-based aircraft	Jaguar A	1974	45	720-750[5]	1 4	1 AN-52 15 kt	10	45-50
	Mirage IIIE	1964	30	600-800[6]	1 8	(1 or 2)x AN-52 15 kt [7]	19	30[2]
Sea-based aircraft	Super-Etendard	1980	36	650	1 0	1xAN-52 15 kt		40

GREAT BRITAIN

STRATEGIC

Platform Mode	Delivery Mode	First Year Deployed	Launch Total	Range (km)	Throw Weight (000 lb)	Warhead Yield	CEP (m)[1]	Warhead/ Bounty Total
4 Submarines[8]	Polaris A3TK	1982 (Chevaline warhead for A3 missile)	96	4700	N A	3x200kt Chevaline MRV		288

TACTICAL

Ground-based	Buccaneer S2	1962	30	1700	N A	2x(bomb deployed)		60
	Jaguar A	1974	36	720-750	1 4	1x(bomb deployed)[9]		36
	Tornado GR1	1982	140[10]	1300	0 95	2x(bomb deployed) WE-177 tactical thermonuclear bomb		280+[10]
Sea-based[11]	Harrier	1980	30	450	N A	1x(bomb deployed)		30

Sources The principal source is International Institute for Strategic Studies, Military Balance, 1985-1986 (London IISS, 1985), pp 160-61 This source is supplemented by several other sources which differ in some details, partly due to date of publication David S Yost, France's Deterrent Posture and Security in Europe, Part I Capabilities and Doctrine, Adelphi Paper 194(?) (London IISS, 1985), pp 13-29, Robbin F Laird, France, The Soviet Union and the Nuclear Weapons Issue (Boulder Westview Press, 1985), pp 85-65, William M Arkin and Richard W Fieldhouse, Nuclear Battlefields (Cambridge Ballinger, 1985), pp 37-64, Eric J Gove, Allied Nuclear Forces Complicate Negotiations," Bulletin of the Atomic Scientists, XLII, No 6 (June-July, 1986), 11-23

NOTES TO TABLE 1

1 IISS, p 161, lists a range of 3200 km See n 5 and Laird, p 46

2 IISS, p 161, and Yost, p 18, cite a payload of one bomb, Laird, p 46, and Barker and Fieldhouse, p 42, indicate two 70 kt bombs Stockpile total taken from Arkin and Fieldhouse, p 42

3 21 Mirage IVs to be reduced to 18 carrying air-to-surface missiles (ASM) by 1987 Sources differ on payload The Military Balance and Grove (p 19) cite 150 kt , Yost estimates the ASM at 150-300 kt (p 19)

4 The number of Pluton systems cited by sources vary from 30 to 44 These are reloadable with perhaps up to 100 warheads available for firing See Yost, p 50, Arkin and Fieldhouse, p 42, list 120 ANT-51 warheads

5 IISS, p 161, lists a range of 1600 km based on a notion of "theoretical maximum range at optimum altitude and speed " Laird, Yost, and Grove base their estimates apparently on combat payload

6 IISS, p 161, lists a range of 2400 km based on considerations noted in n 5 Laird, Yost, and Grove are cited here

7 IISS, p 161, lists one or two bombs

8 Two submarines reportedly carry Chevaline, as of December 1984, the other two were being fitted for the bus See Jane's Defence Weekly, December 15, 1984, II, No 23, pp 1068-1069 Sources differ on the number of warheads Jane's and IISS, p 161, cite 3, Arkin and Fieldhouse, 2

9 Sources differ on the deployment by British Jaguars of nuclear ordnance IISS, p 161, lists the British Jaguar as nonnuclear, Grove, p 20, cites the aircraft as armed with a nuclear device

10 IISS, p 161, cites British purchase of 123 Tornados in British stocks in 1985, including the GR1 strike and F-2 fighter versions Grove, p 10, indicates 80 WE-177 bombs are deployed in West Germany, the remainder are apparently based in Britain A total of 220 Tornados were ordered

11 ASW-helicopters (Sea King, Wasp, Lynx) equipped with nuclear depth charges are excluded

endoatmospheric Sprint type interceptor missile [10] Each British warhead is hardened against nuclear magnetic pulses from ABM nuclear explosions and is coated with an ablative substance to resist heat.[11] The Chevaline would appear to meet the British Moscow test of minimal penetrability

With a complement of two nuclear submarines and an estimated 96 warheads at sea in a crisis British targeters will have a wider set of targets than just Moscow Analysts differ on how wide that set might be ranging from a conservative estimate by Lawrence Freedman that it may be that [Chevaline] does commit Britain to an attack on a few and possibly no more than one large target(s) [12] to a projection that, with aircraft assisted strikes up to forty target sets might be attacked.[13] Calculations made on the basis of Britain s Polaris fleet of 64 Polaris A3 missiles suggest a capacity to put at risk upwards of 20 million people and 25 per cent of the Soviet Union s industrial capacity [14] Despite the limited options available to Chevaline (each bus will still leave only a single if wider footprint than the one megaton Polaris 3A) it would appear reasonable to assume that it will have at least the same and very likely greater destructive power than the Polaris A3 s with a higher degree of probability of penetrating alerted Soviet defenses and of hitting targets with greater accuracy

French Nuclear Systems — The French force is also growing increasingly formidable It is currently composed of three legs The most significant is the sea based force of six nuclear submarines three of which are on patrol at any given time [15] Five submarines are equipped with M 20 missiles with a range of approximately 3000 km. Each submarine carries 16 missiles armed with a one megaton warhead plus penetration aids and decoys A sixth nuclear submarine the Inflexible was completed in 1985 and is equipped with M-4 missiles with a range in excess of 4000 km. The M-4 warhead is MIRVed and is composed of six warheads of approximately 150 kilotons The six fleet force currently affords France 176 warheads in total. In operation with three submarines on patrol it is confined to a range of 48 one megaton warheads or a mix of 128 one megaton (32) and 150 kt weapons (96) The long range M-4 missile permits French submarines to operate outside the Greenland Iceland United Kingdom Gap while those armed with M 20 missiles must be launched from closer to French soil [16]

These forces are complemented by missile and aircraft ground based systems Eighteen S3 intermediate range ballistic missiles (IRBMs) are deployed on the Albion Plateau in southeastern France They are grouped into two squadrons of nine each Each missile is hardened and spaced approximately 3 to 8 km. apart This force is highly vulnerable to Soviet attack from SS 20 missiles with a flight time of only a few minutes French strategists tend to look upon the force as more a trigger of French submarine and possibly aircraft based forces than as a usable part of the French deterrent. A 1983 French parliamentary report conceded that the S3 force is vulnerable but once hit, as the French expect if deterrence breaks down the signature of such an attack would justify the use of the strategic nuclear forces against the aggressor [17]

A Mirage IV force of 21 bombers armed with one (possibly two) AN 22 60 70 kt bombs is the third leg of the triad This force is being replaced currently with a fleet of 18 Mirage IVs armed with medium range air to ground missiles (air sol moyenne portée, ASMP) These air launched missiles have a range of somewhere between 100 300 km. and carry a warhead variably estimated from 100-300 kt. at a speed of Mach 2 While the missile increases Mirage penetrability the aircraft will still have to be re fueled in flight by American built KC 135 tankers very likely over or near enemy territory in the face of active SAM missile defenses and thousands of anti aircraft fighters The Mirage force with ASMP missiles is expected to remain in operation until 1992 1994

British and French Theatre Nuclear Forces — Both Britain and France have tactical nuclear forces aside from British atomic artillery capable of deep strikes into eastern Europe with the possibility of reaching some targets in the Soviet Union in desperate raids A small fleet of 30 Buccaneer and possibly 36 Jaguar aircraft were said to be available to Britain in 1985 [18] They are scheduled to be replaced by 220 Tornado GR1s in the near future of which 140 are reportedly deployed in Britain and in forward bases in Germany The Tornado will carry two bombs with a maximum yield of 200 kilotons [19] The short range of the Tornado (1300 km.) restricts it essentially to an interdiction role within NATO battlefield planning

French tactical systems while more varied than those of the British are similarly restricted to a theatre battlefield role or to what the French characterize as a deterrent maneuver in support of their strategic forces [20] Each of the services has its own nuclear units The army is equipped with approximately 44

Pluton reloadable launchers capable of firing a 15 or 25 kt. missile 120 km The Pluton may be refired in 30 minutes Over 100 warheads are reportedly available for the five Pluton regiments that have been deployed These are dispersed at more than 15 km. distance from each other and are ready to fire within three minutes [21]

Ground and sea based aircraft are also equipped with tactical nuclear weapons The French air force arms 45 Jaguar and 30 Mirage IIIs with atomic bombs rated at 15 kilotons The combat range of these strike forces is limited, ranging from 720 750 km. for the Jaguar and 800 km. for the Mirage The navy is also arming its Super Etendards with 15 kt bombs In 1985 36 Super Etendards carried atomic weapons

British and French Modernization — As Table 2 suggests British and French nuclear modernization programs for the 1990s will complicate Soviet defensive planning The dramatic increase in invulnerable striking power of French British delivery systems and warheads with their increased reliability penetration efficiency and accuracy will insure the ability of each state, alone to threaten the Soviet Union as a viable society In the 1990s Britain is scheduled to acquire four Trident submarines armed with advanced, state of the art D 5 missiles The British Trident will carry 16 D 5 missiles (not 24 as in the U S version) At full payload the range of the D 5 at over 7000 km is approximately 50 percent greater than the British Polaris A3TK and approaches in accuracy those of land based systems (estimated at a circular probable error (CEP) of 150 meters) [22] Each missile can carry from 8 to 14 MIRVed warheads with accompanying penetration aids decoys and heat and electronically resistant coverings There is an inverse ratio between deliverable kilotonage and the number of warheads The U S Navy has fixed on two entry vehicles for D 5 the new 475 kt Mk5/W88 with eight warheads of 475 kt. and 100 kt Mk4/wW76 (Trident C-4) with approximately 12 14 warheads

The British government has announced that its D 5 missiles will be each restricted to 8 warheads The self imposed constraint appears at least partially related to an arms control concern that the United Kingdom not deploy more warheads than appears necessary to meet its counter value deterrent needs vis a vis the Soviet Union A defense ministry paper affirms that acquisition of the D 5 would not involve any significant change in the planned total number of warheads associated with our strategic deterrent force in comparison with the original intentions for a force based on the C-4 missile system [23] There is room to

TABLE 2
FRENCH AND BRITISH STRATEGIC
AND TACTICAL NUCLEAR FORCES IN THE 1990s

FRANCE

STRATEGIC

Platform Mode	Delivery Mode	Launcher Total	Range (km)	Throw Weight (000 lb)	Warhead or Bomb Yield	CEP (m)	Warhead Totals
18 Land-based IRBMs[1]	S3	18	3500	N A	1x1 mg	N A	18
6 Submarines[2]	M-4	80	4400+	N A	6x150 kt	N A	576
1 Submarine[2]	M-20	16	3000	N A	1x1 mg	N A	16
						TOTAL	614

TACTICAL

Ground-based	Hades	100	350	N A	20-60 kt	N A	100+[3]
Ground-based aircraft	Mirage 2000N	85 ASMPs	100-300	N A	100-150 kt	N A	85+[4]
Sea-based aircraft	Super-Etendard	53 ASMPs	650	1 0	100-150 kt	N A	53+

BRITAIN

STRATEGIC

4 Submarines	Trident II D-5	64	7000	N A	1x8 kt Warheads	150	512
Ground-based	Tornado GS1[5]	140	1300	95	2x(bomb yield)		280+

Source Table 1

doubt this assertion The D 5 with the Mk5/W88 bus would more than quadruple the explosive power of the C-4 missile while offering the possibility of increasing the number of smaller yield warheads that can be loaded on the D 5 should circumstances dictate a change in targeting options The British government s self limitation on greater flexibility in targeting choices while ostensibly bound by a solemn unilateral declaration of intent to restrict Britain to C-4 warhead numbers can be rescinded at any time in light of changing security needs By the British Defense Minister s own admission [T]he number of warheads that the Trident II D 5 will carry and therefore Trident s striking power remains wholly a matter of choice for the British government. [24]

The British government has already reversed itself on Trident modernization first choosing the C 4 in 1980 and later opting for the D 5 apparently on grounds of enhanced launch survivability and purported cost effectiveness to bring Britain s system into line with the U S submarine force of the 1990s [25] This presents an additional tricky problem, as discussed below in integrating British nuclear forces into an arms control regime — all the more so since at a minimum one can expect London to deploy 512 strategic warheads aimed at the Soviet Union At least one submarine and very likely two to three can be expected to be on patrol in an emergency This would make somewhere between 128 to 384 MIRVed missiles available to Britain deployed in an invulnerable second strike mode If one assumes a 12 warhead per missile payload, British capabilities rise from 192 to 576 if one to three boats respectively are on station Britain s MAD requirements may thus be estimated to vary from as much as 512 475 kiloton to 768 100 kiloton warheads — and even perhaps 896 warheads if British missiles are armed up to D 5 limits of 14 warheads all in a MIRVed mode

Experience with Chevaline also suggests a sophisticated British understanding of the penetration problem and of ways to solve it. The D 5 footprint goes well beyond a minimum Moscow test Britain is now poised to deliver nuclear warheads against military and logistical support systems of the Soviet Union and Warsaw pact states When linked to NATO nuclear and U S capabilities it may be viewed as a potentially first strike weapon system. A 1981 parliamentary report observed that after a decade of patrols by the Polaris fleet, British submarines had always escaped detection or trailing by Soviet ASW forces [26] The greater range of the D 5 increases the cruising distance of the Trident, multiplying by several fold the

tracking problems confronting the Soviet Union and making the system virtually invulnerable to attack barring a major breakthrough in Soviet ASW capabilities

French nuclear modernization adds to Soviet worries Four of the five submarines each of which now carry M 20 single one megaton warheads will be retrofitted with the M-4 missiles deploying six 150 kt warheads France s first nuclear submarine will remain equipped with 16 M 20s and remain in service until the end of the 1990s retiring shortly after a seventh nuclear submarine with M-4 missiles arrives on station The IRBM system will still be in operation adding an additional 18 one megaton warheads to France s nuclear arsenal In total France will have 614 strategic warheads sometime in the late 1990s and no less than 598 for the first decade of the twenty first century Like Britain France will vastly enlarge its target coverage of the Soviet Union relaive to its initial Polaris fleet of 80 warheads and vulnerable IRBM and Mirage IV forces

By the 1990s France and Britain could have as many as almost 1500 warheads in 10 submarines (4 British and 6 French) half of which can be expected to be at sea at any time The U S Trident fleet of 24 submarines will carry approximately 5200 warheads composed of a mix of 475 kt. and 100 kt warheads [27] British and French submarine forces will comprise almost 25 percent of the West s submarine based striking power In this category the European states will have moved from a position of less than 3 percent of the West s total as late as 1984 [28] That is too sizeable force to be ignored or trivialized either by the Soviet Union or by the United States How these forces will be utilized and what operational strategy will guide their use in threatening or attacking the Soviet Union is of vital interest to both superpowers Neither can be indifferent to British or French independent use of these forces The Soviet Union faces anihiliations the U S as the major ally risks losing control of deterrence bargaining established between itself and the Soviet Union particularly during a crisis and of having the strategies and needs of its smaller partners dictate its moves despite its greater resources and global interests and responsibilities Under these circumstances superpower arms accord is also hampered. Superpower collusion to put pressure on France and Britain to limit or modify their modernization program potentially pits the U S against its allies and in any event, forces a revision of present understandings between London and Washington over the sale of Tridents and D 5 missiles

Nuclear weapons are a great equalizer They not only deter a more powerful foe but, as General Andre Beaufre recognized even before France first created a *force de frappe* nuclear weapons raise the stakes of any conflict. The threat and the destructive losses that their use implies make what would otherwise be secondary or peripheral to an ally of vital importance to it if its nuclear ally was prepared to employ nuclear weapons [29] The risk of involvement in a nuclear war and of escalation getting out of hand create incentives for the more powerful nuclear ally (the United States) to assign higher priority to a smaller nuclear ally s security concerns than it might otherwise and thereby extend its deterrent power to the ally Failure to meet such a test of will between allies in the face of the common adversary s challenge and to seek an isolated or insulated posture from the crisis would be tantamount to abandoning an ally at its hour of need and of essentially shattering the confidence between allies in each others s support that is essential to the maintenance of a security alliance The impact of multilateral deterence among allies on their security and arms control policies and those of the common adversary the Soviet Union next needs examination

Challenge to the United States. Doctrines and Operational Strategies

British Doctrine and Practice — The creation and continued modernization of the British and French nuclear deterrents to respond to the threats posed by the Soviet Union to their security and vital political interests in Europe presents only part of the multilateral deterrence framework within which Britain and France operate Their deterrent doctrines and practices are calculated simultaneously to influence American nuclear strategy whether pursued unilaterally or within the context of the Atlantic Alliance and its NATO integrated military structure Grasp of these added elements of multilateral deterrence is a prerequisite for identifying the lines of possible changes in national and alliance policy that might be reasonably entertained to strengthen the present nuclear arms control regime British and French forces have evolved within that framework and the set of national expectations that it engendered about legitimate levels of mutual destructability

British and French strategic doctrine their nuclear arms control positions their approach to American and NATO nuclear policies and the domestic political consensus on which their nuclear policies rest trace a baseline from which one may reasonably project a plausible range of shifts in British and French behavior

from current practice Specifically British and French participation in strengthening SALT and the SALT process is more likely to develop out of widely held national assumptions about the uses of nuclear weapons and habits ingrained from long experience in creating and managing nuclear systems than from imposed or preconceived notions promoted by the superpower about the role that these forces can and should play in arms control negotiations and in the elaboration of a negotiated nuclear regime Superpower efforts to draw the European nuclear powers into the arms control process are likely to be successful only if they are sensitive to the internal political arrangements and shared strategic assumptions on which the British and French systems differentially rest. These political arrangements and strategic assumptions are potentially manipulable in desirable ways for the superpowers as the discussion below suggests on the conditions that the superpowers furnish incentives for participation that respond to British and French security needs externally and to imperatives for internal governmental and societal cohesion An American appeal to alliance loyalty to induce British and French participation as some analysts have suggested, may be a right step but it will be in the wrong direction if it fails to address French and British concerns [30]

Except for the fact that the British and French nuclear systems are under indigenous governmental authority they present almost totally opposed responses to Soviet *and* to U S nuclear forces Despite periods of tension with the United States over nuclear policies and isolation from the American nuclear program in the decade after World War II the thrust of British nuclear policy has been to work closely with the United States in almost all phases of its nuclear development from the initial organization of Britain s V bomber force to the creation of its sea based systems This is not the place to retrace the long and intricate development of the special U S British nuclear relationship This has been discussed elsewhere [31] What is important for this analysis is to establish the point that Britain s nuclear force especially its current Polaris system and even more so its Trident modernization program, are scarcely conceivable without reference to continued and significant American economic technological and logistical assistance From this point it follows that neither the creation nor management of the British nuclear system nor its future prospects can be conceived apart from the U S deterrent system although for political reasons there may be incentives to obscure or downplay the linkage British claims of independence while certainly real since the British effort to develop modern weapons and strike forces has historically been substantial and

impressive must be qualified by the debt owed to U S assistance and to the web of obligations and expectations that have been created in being tied so closely to the changing strategic needs and demands of the United States and to the organizaational structure and operational modes of its nuclear forces

Under the Trident program Britain will have access to American nuclear submarine missile and warhead technology It is not likely that it will again undertake a costly re development program like Chevaline although it is expected to process its own warheads [32] The British decision to adopt the D 5 missile despite its war fighting and silo busting features in conflict with British minimum deterrent needs was dictated by the advanced design of the missile and its anticipated incorporation in the American arsenal as the principal sea based nuclear system of the United States into the twenty first century Cooperation will be further extended in the form of Britain s use of the U S naval base at King s Bay Georgia as Trident s technical support base not Coulport in Scotland [33]

Since World War II British nuclear strategy has been based on the dual and not fully compatible notions of an independent national nuclear deterrent integrated into American nuclear planning in NATO for the defense of Britain and Europe These aims introduced a fundamental ambiguity into British thinking that persists until today On the one hand, a British deterrent was important to enable Britain to act independently if need arose if again it had to stand alone as in the early days of World War II An independent force capable of contributing to the American effort, also insured coverage of targets that might either not be ignored by the United States or of lesser interest to it [34] Beyond these two roles — as independent actor and as compliant ally — there was a third and more important role influencing American nuclear decisions precisely through the possession of an independent nuclear capacity By means of joint targeting and consultation over strategy it was believed that Britain would gain access to American nuclear decision making Such access was considered as important as the development of an independent nuclear force to deter Soviet attacks directly

Since World War II the United States was understood to be indispensable for the defense of Britain and Europe Both its resources and political will had to be engaged An independent nuclear force was paradoxically conceived as part of this alliance binding strategy Margaret Gowing describes the early thinking of the British Chiefs of Staff in their development of a global strategy for the United Kingdom

> The British part in this strategy was fourfold to exercise influence on Cold War policy to meet NATO obligations to prepare for war in case the deterrent failed and to play a part, albeit a small one in the main deterrent, the air offensive This fourfold problem must be solved without ruining the economy
>
> What of the British part in the atomic deterrent? The deterrent at present rested entirely in American hands The document concluded that, largely for economic reasons it must remain there But, said the Chiefs of Staff it would be quite wrong for the United Kingdom to take no share in it It was not possible to rely on the Americans to deal adequately with targets not of direct strategic interest to the United States 'We feel that to have no share in what is recognized as the main deterrent in the cold war and the only Allied offensive in a world war would seriously weaken British influence on United States policy and planning in the cold war and in war would mean that the United Kingdom would have no claim to any share in the policy or planning of the offensive [35]

As early as 1948 British planners estimated that in a decade 600 nuclear weapons would be needed in defending against and deterring the Soviet Union The United States was expected to furnish two thirds of this number and Britain the remainder Despite the McMahon Act of 1946 which prevented British access to the American nuclear program, British military planners continued to work closely with their American counterparts B 29s were stationed in Britain and by the 1950s all were capable of carrying nuclear weapons Cooperation improved with the amendment of the McMahon Act The Atomic Energy Act of 1954 permitted the United States to transfer weapons information to nuclear advanced states [36] It led eventually to the signing in 1958 of a cooperative accord between the two states that has since regulated their exchange of information about nuclear intelligence materials delivery vehicles propulsion systems and warheads [37] This has been an entirely one way street in the postwar period Britain contributed, among other things fissionable material and know how on weapons design to American researchers In 1957 it accepted U S Thor IRBMs and contracted for the Skybolt air to ground missile to arm its bomber fleet

The cancellation of Skybolt and the withdrawal of Thor were only temporary setbacks in the British quest to develop a close and continuing nuclear partnership with the United States Over the reservations of Defense Secretary Robert McNamara, who had dismissed small independent nuclear systems as dangerous expensive prone to obsolescence and lacking in credibility as a deterrent, [38] President Kennedy agreed in December 1962 to provide Polaris missiles and design know how for the submarine platform and warheads as a substitute for the cancelled air to surface Skybolt missile In exchange Prime Minister Macmillan agreed to assist in developing a multilateral nuclear force and to designate Polaris missiles to NATO and to

integrate their targeting with NATO plans [39] American resistance to the notion of independent nuclear forces gradually eroded, aided by the demise (thanks partly to British reluctance) of NATO multilateral nuclear force [40] In a reversal of McNamara thinking the United States acknowledged in the NATO Ottawa declaration of 1974 that European nuclear sytems contributed to deterrence

From an alliance perspective Trident modernization when linked to British support for the deployment of American theatre nuclear forces in Europe under NATO command solidifies the integration process underlying British policy Trident targeting will continue to be coordinated with NATO plans and the system is supposed to be available to SACEUR Trident will add significant numbers of new warheads to the NATO and, by extension to the American arsenal raising the possibility of British cooperation in limited nuclear strikes against Warsaw Pact and Soviet military bases The British Trident implicitly couples British and American nuclear systems and potentially incorporates British forces into U S planning The latter has been progressively moving toward a limited nuclear strike posture — what might be characterized as a MAD plus strategy [41] To the degree that British warheads are available for NATO U S use through SACEUR and are integrated with the 108 Pershing II and 464 cruise missiles to be deployed by the United States in Europe — of which 160 cruise missiles (GLCMs) will be stationed in the United Kingdom, the U S will be able legally to circumvent SALT limits on MIRVed delivery vehicles Neither the American nor the British Trident systems can be realistically evaluated apart from this larger American strategic framework As one analyst has observed, Trident advocates choose to see the missile in isolation whereas in fact it will be integrated in war plans with the MX Pershing II Midgetman stealth cruise missiles and bombers and *eventually British Trident II forces* [42]

In this light, British forces are viewed in some U S planning circles as a valuable supplement to European *and* global deterrence Britain is also seen as playing a valuable balancing role on the continent It simultaneously helps to maintain over all bloc parity with the Warsaw Pact and offsets German economic and conventional military power Since France could not be relied upon as a nuclear partner within the alliance the role of interlocutor for American nuclear policy in Europe fell almost by default to Britain Trident places into relief Britain s diverse deterrence and diplomatic roles even more so than Polaris did a weapons generation ago when President de Gaulle vetoed Britain s entry into the European Community

largely in reaction to Britain s nuclear dependency on the United States The utility of an independent British deterrent as a balance wheel in the European Community and as a means through which to project American security preferences has grown since the disputacious period of the early Polaris years What distinguished 1962 from 1980 as one student of British nuclear policy notes was the unarticulated recognition that independent British forces were militarily useful in an era of strategic parity and politically essential in a time of growing West German power [43] Britain is second only to West Germany in the number of U S nuclear weapons deployed in its soil (1268) It also serves as a base for U S nuclear delivery systems including 170 F 111 fighters Poseidon submarines and GLMCs In addition it houses key nuclear and naval command centers and air and space surveillance units of the U S and NATO [44]

Contrasting with this picture of the integration of British nuclear forces into American and NATO security planning is the persistent assertion by British leaders and military commanders that British nuclear forces must remain independent to serve specific British national interests The British developed an atomic (1952) and then a thermonuclear device (1957) quite independently of the United States The V bomber force of Valiant (1955) Vulcan (1957) and Victor (1958) aircraft provided Britain a credible strike force potentially capable of delivering 230 megatons on an equal number of targets [45] In the early 1960s Britain had more deliverable megatonnage at its disposal than a decade later with Polaris although by the time that the V bomber force was fully operational it was threatened as a survivable system by the introduction of ICBMs into the Soviet arsenal and the upgrading of Warsaw Pact air defenses

Both the Polaris and the Trident, while earmarked for NATO can be withdrawn at any time for national use It seems reasonable to assume that these forces will not be available to SACEUR when they may be most needed. Either there will not be enough time to complete the necessary consultations and clearances for access to them by SACEUR or they will have already been withdrawn by British authorities to discharge their primary missions which is to attack as one government document indicates key aspects of Soviet power [46] NATO plans are less definitive in their military objective As Lawrence Freedman concludes in his analysis of British targeting policy [D]espite the assignation of Britain s nuclear forces to NATO the assumptions and dominant plans surrounding their targeting do not, as far as can be gathered from the public record naturally fit in with any NATO plans The trend in British public pronouncements

suggests that the standing alone hypothesis is the underlying rationale for the nuclear force [47] In a word British nuclear forces are poised in two potentially conflicting modes as an instrument of alliance cohesion with the United States and its NATO partners and as a servant of an independent national will and interest Any arms control regime to which Britain might be a party will have to be reconciled with this strategic ambiguity of long standing [48]

French Doctrine and Practice — The French case presents no fewer problems than does Britain in reconciling French nuclear doctrine and operational strategy with an arms control regime compatible with superpower policy With the installation of the Fifth Republic and the ascendancy of Charles de Gaulle to the presidency France has single mindedly pursued a policy of national independence in developing its nuclear forces Rejected were Fourth Republic claims that the French program was at the disposal of the western alliance In the aftermath of the Suez crisis and the U S decision to refuse French access to its nuclear know how on a par with Britain all hope of being able to cooperate with the United States as an equal partner was also abandoned as an option [49] French withdrawal from the NATO military integrated framework underscored de Gaulle s Fifth Republic s determination to employ its conventional and nuclear forces independently of NATO S SACEUR or its allies

Like Britain French nuclear policy is based on the notion of proportional deterrence The French nuclear force is expected to inflict greater damage on an adversary than the expected gain in attacking French vital interests In contrast to British concern for retaining the American nuclear guarantee by encouraging consultation and cooperation and by committing its conventional and nuclear forces to NATO planning French policy makers since de Gaulle have jealously guarded French independence and refuse to identify if and when French forces will be available in the alliance s response to Soviet or Warsaw bloc aggression Specifically at issue are conventional and tactical nuclear forces which may be used quite separately from NATO units They are subordinate to France s deterrent maneuvering and their use is to be in strict conformity with French needs

It is impossible to say with certainty at what point France will cooperate with its allies in conventional operations before it unleashes its tactical or strategic nuclear forces The views of General

Mery roundly criticized at home when they were first propounded in 1976 appear to have gained ground in official thinking and policy Mery cast France s defense and deterrent strategy in terms of cooperation with its allies while retaining unqualified national control of France s nuclear and nonnuclear forces Rejecting the idea of a national sanctuary protected by France s *force de frappe* Méry envisioned a much wider terrain for French military action His enlarged sanctuary encompassed Europe and its approaches including the Mediterranean basin [50] That there could be two battles — for Europe and then for France — did not appear realistic French President Valéry Giscard d Estaing extended Mery s reasoning

> Some people reason that any conflict taking place outside France would completely spare the national territory from battle This concept is unrealistic In fact, in the event of conflict there would be only one zone because of the speed of transportation and communications especially by air and from the outset French national territory would be included in this generalized battle area For this reason there must be only one military system in this zone since there will only be one zone [51]

Socialist President François Mitterrand continued along the path of positioning France to participate in NATO operations if it chose to exercise that option while affirming France s autonomy of decision and the possibilities of non belligerancy and non automaticity At the Kremlin Mitterrand told his listeners that if we belong to a defensive alliance the Atlantic Alliance we are no less deprived, outside as we are to the integrated command of this Alliance of our decisional autonomy [52] As for nuclear weapons explained the French president, only the President of the French Republic can use them These are not words devoid of reality We know in all certitude that our fate our independence our very survival depends on our autonomy [53] Former Defense Minister Charles Hernu also accented the dual stance of the sanctity of national territory and the need for the independent nuclear forces as its guarantee and France s obligation to participate with its allies in joint defense of alliance interests [N]uclear deterrence the expression of the will of a unified nation observed Hernu in presenting the government s five year military plan to the National Assembly remains the foundation of our society This first circle is the sanctuary the permanent the untouchable or again what makes France what it is But France is not only a sanctuary She is directly concerned with the security of its neighbors to which it is linked by treaty [54]

The decisions to modernize France s tactical nuclear forces and to create a *Force d Action Rapide* (Rapid Action Force FAR) to reinforce its units in Germany are designed to strengthen France s deterrent

maneuverability and to assist its allies in more timely fashion if the French president decides that it is in France s national interest to join in the forward battle against an attack from the east. Tactical nuclear forces have been reorganized to differentiate them more clearly from conventional units This change will presumably provide French decision makers with greater control over escalation and clearer articulation in utilizing France s forces to project progressive French determination to resist aggression Unlike Pluton Hadès which will become operational in the 1990s will not threaten West German territory if while based in France it is used to strike at troop concentrations and installation in eastern Europe Hades role will be primarily to signal the preparation of a strategic blow It will also have selective battlefield use (or as much as can be expected with 20 60 kiloton weapons) since the Right of Center government of Prime Minister Jacques Chicac has cancelled work on the neutron bomb) The warning from Hades stated French Armies Forces Chief of Staff General Jeannou Lacaze must have *military effect* which is to say that it must be effective and brutal which means a relatively massive employment and therefore limited in *time and space* But above all this warning must be integrated in the general deterrent maneuver [55]

The changes made by the Socialist government in disposing France toward greater alliance cooperation however helpful in coordinating NATO and French moves still did not get at the heart of the problem of reconciling France s treaty commitments with its jealous retention of national control over its forces The Socialist response to relax this tension in some way deepened it FAR was created at the expense of a 22 000 man cut in ground forces France may get to the front more promptly but it will do so with fewer troops The designation of FAR for extra European duties also threaten to weaken its effectiveneess and perhaps its availability when needed given French Mediterranean and Black African security responsibilities Nor are critics mollified by statements such as those by former Defense Minister Charles Hernu Anyone who tells me that he prefers an additional division of soldiers to a nuclear missile launching submarine is living in the wrong age [56] The problems raised by the French do not arise in such acute fashion with Britain s conventional and nuclear forces Unlike French forces British Tornado strike aircraft and nuclear ground artillery are assigned to SACEUR and integrated into NATO planning This suggests a presumption if not necessarily a guarantee of Britain s early participation in a conventional battle in Europe

There are several costs to alliance cohesion in French ambiguity about when where and in what manner France s conventional and tactical nuclear forces will be used in support of its allies whatever one may say about ambiguity as a handmaiden of deterrence Allied forces simply cannot count on French assistance or worse it may have to count on them all too well if they trigger prematurely a nuclear exchange or a rapid and perhaps uncontrolled escalation of a conflict. The clearer and more articulated military and deterrent moves envisioned by French planners do not appear very plausible if both allies and adversaries are left in the dark about their use It is not clear how France will be able to communicate its intentions in a crisis if it has little experience in doing so during peace The vulnerability of French nuclear ground units also invites preemption an incentive that would have been less heightened in the mind of an aggressor who had been conditioned to believe that an attack on France was simultaneously an attack against the western alliance The added concern of German officials is understandable German officials are worried that in striking eastern targets many civilians will be killed They are Germans too [57] Bonn insists Bonn has been unsuccessful in its efforts to learn about French plans despite repeated requests for clarification

Prospects for British and French Cooperation in Nuclear Arms Control

Both European nuclear states pursue announced strategies of proportional deterrence For the next decade before their strategic warhead arsenals will have been expanded, they will be necessarily restricted to strikes against soft high value targets — industrial complexes oil and logistical depots and population centers The MAD plus strategies of the superpowers — involving targeting against military installations especially the nuclear systems of the opponent, selected nuclear strikes escalation control and dominance damage limitation and favorable war termination moves — may well be precluded by the limitations of resources capabilities space and time confronting British and French forces These inherent limitations in the practice of deterrence by the medium nuclear powers are enhanced by the possibility that one or the other might trigger a first use of nuclear weapons by the United States or the Soviet Union and not necessarily by conscious design or deliberation While both governments deny such an intent,[58] the structure and size of their forces may under crisis circumstances raise or give added point to incentives bearing on the

superpowers to disarm or diffuse British or French nuclear forces All nuclear powers may be catapulted into an unsought war which no one wanted

Both British and the French strategic forces raise the issue of controlling and terminating hostilities if they arise There is also the problem of accidental unauthorized or unintended use not to mention Soviet preemption of British and French nuclear forces While these sea based forces are currently invulnerable they are small Improvement in ASW or ABMs may in the future seriously degrade their effectiveness although for the immediate future especially when current modernization plans are completed both submarine based systems should be able to penetrate Soviet defenses and to unleash intolerable damage on the Soviet Union There lies the principal problem The British and French may impose on the United States (and the Soviet Union) their preferred strategies or their unwitting moves on the superpowers It is precisely these possibilities that provide bargaining leverage for the British and French in manuplating the superpower to their liking and in cooperating — or not — in developing an arms control regime for nuclear weapons

The intimidating power which will be at the disposal of London and Paris in the next decade prompts a review of the prospects of British French participation in strengthening the arms control arrangements fashioned by SALT I and II The preceding analysis suggests that realistic expectation of French and British adaptation to the SALT regime if it is indeed retained by the superpowers themselves in its current ragged and refracted form, will have to be made compatible with the not always consistent and coherent strategic policies and aims pursued by the European nuclear states and not conceived simply on the basis of an appraisal of what might appear desirable in the abstract

Parameters of British and French Participation in the Arms Process — The limits of British and French interest in participating in strategic arms limitation talks are fundamentally dictated by their need to dispose sufficiently invulnerable and reliable nuclear forces to credibly meet a test of assured destruction in the wake of a Soviet attack on their strategic forces or against their vital interests Both states reject any limitations on their forces which would weaken or preclude their unilateral capacity to preserve an assured destruction standard as the minimal test of the effectivenss of their deterrence policies France has been especially explicit on this point In a news conference on September 24 1982 President Mitterrand

rejected the possibility that France s nuclear forces could be negotiated away France cannot accept that a part of our nuclear armament is negotiable said the French president, because if that were so we would fall into a level at which our deterrent capacity would be destroyed France s international position refuses prohibitions We refuse to accept the prohibition of others [59]

In a similar vien one British arms control official observed that it is short of absurd to suggest that the British deterrent force which is of minimal size and capacity of last resort, should be tied to an equation which links it with only one element [the SS 20] of the threat posed by the Soviet Union to the United Kingdom To equate the British deterrent with the SS 20 is therefore not only wrong by definition but unacceptable in terms of deterrence [60]

Both governments would appear to agree to participation if several conditions were met. First, there would have to be substantial decreases in U S and Soviet offensive striking power As British Prime Minister Margaret Thatcher put the matter If between the two big powers the numbers went down massively and enormously and we moved into a totally different world then there may be circumstances when ours [British nuclear forces] will have to be counted [61] Former French Foreign Minister Claude Cheysson made essentially the same point in citing as a precondition for French participation in arms talks the reduction of the superpower arsenals to levels where one might consider that the gap between capabilities had changed in nature [62]

Second, neither Britain nor France accepts the proposition that a separate Eurostrategic balance should be defined by the superpowers apart from their global balance Several related considerations underlie their positions Both are wary of isolating Europe as an arena of conflict wherein the superpowers would tacitly agree to sanctuarize their homelands Although Paris has withdrawn from NATO it shares London s concern that American theatre and global nuclear forces be treated as a single field of deployment in which the multilateral system of deterrence that is constructed couples U S and European security interests in such a way that the risk of a nuclear war in Europe is rendered indivisible among the nuclearized western allies [63]

Both also reject the Soviet Union s assertion of an implicit veto over American deployment of intermediate range nuclear systems to respond to Soviet theatre capabilities President Mitterrand charged that the Soviet Union not the United States was upsetting the global and regional military balance In

underlining the Soviet Union s search for European supremacy Mitterrand acknowledged that only the United States has the means to restore the balance of power [and that] France will not hesitate to complete its deterrent weaponry [64] A Soviet veto over U S deployments would be tantamount to a privileged Soviet position to define the superpower nuclear balance in Europe while decoupling the United States from its allies The western nuclear states are steadfast in denying this *droit de regard* to Moscow

Neither European nuclear power accepts the Soviet Union s claim that British and French nuclear forces be included in intermediate nuclear force (INF) talks since they consider their forces as strategic (No matter that the United States excluded both states from SALT II negotiations because they were considered theatre forces while the two superpowers shifted roles in INF talks)[65] London and Paris also object to any direct tie between their systems and Soviet theatre forces (SS 20 Backfire and forward base systems) out of fear that the latter could be reduced in order to limit French and British capabilities while leaving untouched long range Soviet capabilities In a perverse fashion France and Britain would then be reduced to a zero option by Soviet dismantlement of its theatre nuclear forces Similarly neither they nor the United States accept the view that the Soviet Union be compensated for the threatening systems aimed at it That would mean that the Soviet Union would have a right to an aggregate of striking power equal to the other major nuclear powers combined [66]

An arms regime acceptable to France and Britain will therefore have to contain coupling features for U S deployments to tie the United States closer to Europe Additionally nuclear coupling is linked to the concern in both capitals that Germany be assured U S protection and that it be anchored to the western alliance The British Trident, as already noted, was partly justified as a means of maintaining the American connection the INF deployments were expected to solidify it Given France s iconoclastic nuclear position Britain is a better bridge between the U S and Germany than France The Soviet challenge to U S INF deployments and to British and French systems was calculated to weaken the delicate deterrence fabric woven by the western allies An arms regime must also acknowledge paradoxically that the western systems can act separately and independently of each other yet are constrained by alliance ties varying from the close working relations developed between British American and NATO nuclear planners to the more tenuous and distant commitments linking France to its alliance partners

Third, not much progress in drawing France and Britain into nuclear arms talks is likely to be made unless the conventional balances in Europe favoring the Soviet Union and the Warsaw Pact are rectified France has explicitly set this as a condition for talks and also includes chemical and biological weapons in Europe as an impediment to its participation [67] The French are particularly reserved about the mutual balanced force reduction (MBFR) discussions in Vienna. Aside from their usual objections to bloc to bloc discussions they fear that the West will be the ultimate loser because of the superiority enjoyed by the Soviet Union and its allies The American conventional presence is likely to be weakened limits on West German conventional build ups might be established and Soviet capacity to intervene militarily would not be materially affected by withdrawal because of its control over Warsaw pact forces and its proximity to western Europe The decisive French objection to MBFR as David Yost concludes has been that these negotiations could undermine the effectiveness of the NATO structure and could handicap the pursuit of West European defense options in the long term [68] The French arms industry and, specifically close collaboration with West Germany might be jeopardized by a conventional arms accord unfavorable to the West and potentially restrictive with respect to the development of outlets for French arms which are indispensable to the preservation of an indigenous arms production capacity [69]

The fourth and most formidable obstacle to British and French participation or concessions to an arms regime is the development of superpower defensive capabilities including ABM ASW and ASAT systems [70] The British decision to develop Chevaline and, later to opt for the Trident II or D 5 missile were pointedly guided by ABM developments Chevaline was designed to deflect the ABM missiles deployed around Moscow in conformance with the SALT I treaty D 5 was a hedge against a breakdown of the ABM Treaty regime and possible new deployments by the Soviets [71] It stretches credibility to believe that either Britain or France will be disposed to cut back on their nuclear modernization programs if SALT I is abrogated even if by mutual superpower consent ABM systems initially are likely to be more threatening to the medium nuclear powers than to either superpower although as noted earlier the size and sophistication of the British and French nuclear systems of the 1990s are likely to be sufficiently resilient and robust to overcome a Soviet ABM in the immediate future [72] The number of warheads available to London and France would appear large enough to inflict unacceptable damage on the Soviet Union if these

warheads are aimed at high value targets an incentive reinforced by the development of ABM systems which are likely to be effective more for point than for area protection [73]

The United States the principal ally is of course the major stumbling block The Reagan administration s unwavering commitment to the Strategic Defense Initative (SDI) have elicited strong criticisms from officials in Britain and France In a speech on March 14 1985 British Foreign Secretary Sir Geoffrey Howe summarized many of the points raised by critics of the scheme that it potentially de stabilized the current deterrence system and hampered ongoing arms control efforts that the technological barriers to SDI especially its most ambitious claims of civilian defense were very likely insuperable that SDI offered no protection against aircraft or cruise missiles battlefield nuclear weapons or covert action [74] that political control might be lost as key parts of the nuclear decisional process were automated that costs would run into many hundreds of billions of dollars [75] that military opportunity costs measured by cuts in conventional arms might be prohibitive that an offensive and defensive arms race with the Soviets would be stimulated with resulting spiraling costs and risks and little or no gain in security that the ABM treaty would soon be violated if either side went much beyond basic research that in the end the American nuclear guarantee might itself be put in question if allies shared the risk of war and damage differentially and that insecurity and instability would result in the long transition period toward creating a new security framework for the West.

Howe wondered whether SDI was worth it. Other things being equal we welcome cost-effective enhancement of deterrence to meet palpable weaknesses on the western side But we have to consider what might be the offsetting developments on the Soviet side if unconstrained competition in ballistic missile defences beyond the ABM treaty limits were to be provoked In terms of NATO s policy of forward defence and flexible response would we lose on the swings whatever might be gained on the roundabouts? [76] Paris had similar reservations In a presentation to the National Assembly Defense Minister Charles Hernu argued that superpower competition in developing defense systems against nuclear attack would prompt an arms race dismantle the space and ABM treaties sanctuarize the homelands of the two superpowers at the expense of U S alliance commitments and extended deterrence and accentuate the conventional imbalance in Europe [77] The Socialist government launched its own backfire in the form of a civilian based space

program Eureka, partly to inhibit the U S campaign to gain support for SDI in Europe through potentially lucrative defense contracts with European firms [78]

American pressure and persistence over SDI have made Paris and London tacit allies of the Soviet Union in efforts to save the ABM treaty and to slow work on defensive systems In Howe s March speech he contrasted Britain s preference for the existing deterrence regime and for arms control negotiations to strengthen it, while lowering the size and cost of nuclear weapons to President Reagan s alternative of a defense based security system beyond deterrence He held Washington to four conditions agreed to by the President in his meeting with British Prime Minister Margaret Thatcher at Camp David in December 1984

> The U S and western aim is not to achieve superiority but to maintain balance taking into account Soviet developments
>
> SDI related deployment would in view of treaty obligations have to be a matter of negotiations
>
> The over all aim is to enhance, not undercut, deterrence and
>
> East West negotiations should aim to achieve security with reduced levels of offensive systems on both sides [79]

These same conditions were reiterated by British Defense Minister Michael Hesseltine in justifying to Parliament the British government s signature of contracts to assist in SDI research despite Howe s reservations [80] The upshot of the British position is to hold SDI to a negotiated framework with the Soviet Union using its contractural understanding with the United States in much the same way that the NATO two-track decision was calculated to influence U S arms control policy as well as its deployment of nuclear weapons in Europe

If American ABM policy can be controlled and channeled by Britain and its European allies one can envision British less so French participation in superpower negotiations to lower nuclear levels Indeed, the British French reservations about SDI ironically bolster the nuclear arms control process although both powers have resisted until now their entry into negotiations SDI is compelling them to address the issue of preserving the multilateral deterrence system in which their nuclear forces and modernization plans have been cast. For the British government, a Soviet U S arms accord on theatre nuclear weapons which would be consistent with constraints and conditions discussed earlier might well be attractive The Thatcher government faces a strong and rising tide of opposition at home to the Trident

decision Critical budgetary decisions about going ahead with Trident are scheduled for 1988 Labor is on record favoring cancellation of the system and unilateral nuclear disarmament [81] The Liberal and Social Democratic Parties prefer active British negotiations in lowering nuclear weapons levels and strengthening the stability of nuclear deterrence through arms control negotiations [82]

What form these negotiations might take and what accord might flow from them is difficult to say France is not likely to participate in such talks All major parties in France oppose cuts in French capabilities and are suspicious of being drawn into talks which would limit French strike forces and modernization plans There may not be major cause for alarm There are likely to be natural limits on French nuclear growth due to technological and economic restraints as well as to internal political pressures to hold the French defense budget down Britain is already on record in opting for lower warhead deployment on D 5 than the system is capable of delivering to keep the British deterrent consistent with the original intentions for a force based on the Trident C-4 missile system. [83] Additional British warhead reductions might be feasible if coupled with Soviet cuts say of SS 20s and a U S dismantling perhaps of Pershing IIs which are exposed and subject to hair trigger use in a crisis because of the incentives they generate for Soviet preemption Such a superpower course foreshadowed in the Nitze Kvitsinsky walk in the woods understanding might still be possible [84] As long as the Nitze defined reservations of feasibility survivability and cost effectiveness prevail in American policy circles as tests of SDI effectiveness restraints on ABM research are conceivable Pressures to cut defense spending in Congress will also slow work on SDI

Countervailing pressures may not be sufficient to stem, merely only to slow defense system development. There may well be even a re negotiation of the SALT I treaty to legitimate what the superpowers are already doing (e g the Soviet phased radar system at Krasnoyarsk and the U S systems being built in Greenland and Great Britain) and what is being projected for the future A British U S Soviet accord on theater wapons would still be useful It would not only bring Britain into the arms control process and strengthen both multilateral deterrence and arms control in its own right, but it would also assist in incorporating new defensive technologies into a negotiated nuclear environment, while

avoiding the costs and risks of a unilaterally defined nuclear regime— a strain on alliance cohesion and a stimulant to a renewed and unregulated arms race

In the foreseeable future French cooperation cannot be expected either on such an arrangement or on participation in formal arms control negotiations A more indirect approach and more subtle incentives for cooperation will have to be developed by its allies and adversaries to draw France into a more stable deterrence network and into accepting — even supporting as through its opposition to SDI and to the Soviet military build up — an arms control regime Several routes may be available First, the long term viability of the French system would be enhanced by access to American technology and C^3I systems know how French air and missile defenses depend on NATO and U S systems France for example relies on the U S Transit system of navigation satellites and U S naval navigation technology is employed by the French military The NADGE air network is important to French air defense U S KC 135 tankers re fuel French strike aircraft. Washington agreed to furnish new engines for these tankers in 1981 [85] and the Kevlar casing material for the French M-4 missile system is made of American materials [86] Communication with French submarines would very likely be improved with access to U S technology Perhaps most critical would be knowledge of U S advances in ASW and in improving France s capacity to avoid or defeat Soviet ASW forces to insure the invulnerability of the French nuclear submarine fleet. Whether the French would be prepared to share more knowledge about their nuclear systems and plans in return for U S help is problematic The record so far is far from encouraging But the costs of remaining in the arms race mount and as the Gaullist heritage recedes future Paris governments may be more flexible on these counts

Another modestly promising line of entanglement to draw France into alliance cooperation on nuclear planning may be through the prudent exploitation of twin fears at the surface of French security concerns of U S withdrawal or depreciation of its conventional and nuclear commitments to the alliance and to European defense and of a politically unmoored West Germany drifting toward neutralism These fears are implicitly expressed in France s resistance to SDI and MBFR negotiations and, conversely in its support for U S theatre nuclear deployments and in its insistence on Bonn s acceptance of Pershing II and cruise missiles For much of the Fifth Republic French strategic policy has been based on the

contradictory stance of national independence and unilateral disposition and decision of French forces in meeting its interpretation of alliance commitments and on its expectation of access to the U S guarantee through the Washington Bonn London axis As the U S displays increasing unilateralist tendencies and withdrawal symptoms witnessed by SDI and gradual qualification of SALT restrictions France may have to re think its empty chair approach Here the record is more encouraging if France s increased willingness since the 1970s to cooperate in controlling nuclear proliferation is any indication [87]

In the same way that Britain draws Washington to address Europe s concerns Bonn may prove to be France s bridge to Washington in inducing greater French cooperation in NATO especially in conventional defense Greater Paris Bonn military cooperation in evidence for over twenty years in weapons development,[88] will at once distance both from Washington in reinforcing continental drift within the alliance and yet draw them are closer together in meeting to alliance needs by their mutual support for a stabler deterrent system than exists today for serious but flexible arms control negotiations and for the preservation of the gains and yet unrealized possibilities of the detente process institutionalized in the Conference on Security and Cooperation in Europe and in differentiated bilateral ties between Moscow and its East Europe clients with the West European states

Conclusions

The present size and projected growth of British and French nuclear forces in the 1990s pose serious security and arms control problems for the Soviet Union and the United States Either European nuclear power can now very likely and with more certainty in the next decade inflict intolerable damage on the Soviet Union even after absorbing an initial attack on its society As allies of the United States both have an increasing capacity to pursue strategies favorable to their preferred interests and values at the potential expense of American aims The arms control implications of the British and French nuclear systems can thus be understood in a context of multilateral deterrence as the bargaining framework within which the two European nuclear powers can be expected to assume a role either in resisting integration of their systems into the present arms control regime deriving essentially from SALT I and II or as appears progressively to

be the case in working to preserve what remains of these accords and the arms process from which they have flowed.

The parameters within which the two European systems are likely to be integrated within a SALT START Geneva arms control process are defined by the current and future composition of these forces the historic strategies pursued by these states in creating a desirable multilateral deterrent environment, and the domestic consensus on which their nuclear capabilities and strategies rest. While both have adopted a posture of minimum deterrence towards the Soviet Union each has followed contrasting strategies in its efforts to influence and inflect American nuclear policies and practices the British preferring to integrate their policies with those of the United States within NATO the French to distance themselves from Washington within the Atlantic Alliance in order to maximimize both their independence and leverage over U S moves

In varying measure both Britain and France share several prerequisites that will have to be met before they will consider participation in superpower arms control talks (1) substantial reductions in superpower offensive nuclear forces (2) superpower acceptance of British and French forces as strategic weapons and superpower recognition of a unitary Eurostrategic and superpower nuclear balance and the concomitant multilateralization of the risk of nuclear war (3) substantial reductions in Soviet and Warsaw bloc conventional superiority as well as (add the French) chemical and biological weapons and (4) no substantial change in superpower nuclear defense capabilities

Recent trends in superpower behavior — away from a negotiated nuclear environment to a unilaterally defined framework — are creating incentives for a re thinking of British and French pre conditions for arms control participation With the possibility of significant improvements in superpower nuclear defensive capabilities London and Paris are prompted to review their empty chair positions and assume a more active role towards arms talks just to preserve rather than advance what remains of the current ragged and refracted arms control regime haltingly and erratically defined by the superpowers since the early 1970s and now under siege

Notes

French and British Nuclear Forces
Implications for Arms Control

1 This is the thrust, for example of German Chancellor Helmut Schmidt s address before the International Institute for Strategic Studies The Alastair Buchan Memorial Lecture *Survival* No 20 (January February 1978) pp 2 10 See the author s Europe The Partial Partner *International Security* V No 3 (Winter 1980/81) 104 127 especially pp 105 115

2 These alternate concerns as they were reflected in the NATO decision to modernize NATO theatre nuclear weapons are traced with great insight and informed opinion in Strobe Talbott s *Deadly Gambits* (New York Vintage 1985) especially pp 3 206 An earlier version of the same alliance play of tensions is found in Henry Kissinger s *The Troubled Partnership A Reappraisal of the Atlantic Alliance* (New York McGraw Hill 1965)

3 This is certainly the view of many associated with the European peace movement. See Talbott, passim

4 These conflicting strategic and foreign policy objectives balancing American demands for flexible response and conventional defense against a European preference for deterrence and arms control to moderate a war fighting nuclear posture while maintaining detente with the Soviet Union and the eastern bloc are reflected in Christoph Bertram s Implications of Theatre Nuclear Weapons in Europe *Foreign Affairs* LX No 2 (Winter 1981 82) 305 326 and Strategic Defense and the Western Alliance in *Weapons in Space* Franklin Long *et al* eds (New York W W Norton 1986) pp 279 296

5 Andre Beaufre *Dissuasion et Strategie* (Paris Colin 1964) especially pp 85 116 on multilateral deterrence and Pierre Gallois *Strategie de l Age Nucleaire* (Paris Calmann Lévy 1960)

6 For a general discussion of MAD and its proponents see Lawrence Freedman *The Evolution of Nuclear Strategy* (New York St. Martin s Press 1981) especially pp 225 256 A brief but cogent statement of the argument that MAD limits the current technological and strategic environment is sketched by Spurgeon M Keeny Jr and Wolfgang Panofsky MAD Versus NUTS *Foreign Affairs* LX No 2 (Winter 1981/82) 287 304 Evidence to support the minimal tests of mutual destruction that the British and French systems will almost assuredly meet, if not now then in the 1990s is found in Kevin N Lewis The Prompt and Delayed Effects of Nuclear War *Scientific American* CCLXI No 1 (July 1979) 35-47

7 President Reagan s announcement is reported in the *New York Times* May 28 1986
8 *Ibid* May 31 1986

9 Peter Malone *The British Nuclear Deterrent* (London Croom Helm 1984) p 119 and William M Arkin and Richard W Fieldhouse *Nuclear Battlefields* (Cambridge Ballinger 1985) p 47

10 Robert Hutchinson Chevaline UK s Response to Soviet ABM System *Jane s Defence Weekly* II No 23 (December 15 1984) 1068 1069

11 *Ibid* p 1069

12 Lawrence Freedman British Nuclear Targeting *Defense Analysis* I No 2 (1985) 93

13 Malone p 119

14 Freedman *Defense Analysis* p 92 See also Geoffrey Kemp *Nuclear Forces for Medium Powers Part I Targets and Weapon Systems Part II and III Strategic Requirements and Options* Adelphi Papers

No 106 and 107 (London IISS 1974) and Ian Smart, *Future Conditions The Prospect for Anglo French Nuclear Cooperation* Adelphi Paper No 78 (London IISS 1971)

15 Useful reviews of French nuclear capabilities are found in Robbin F Laird, *France the Soviet Union and the Nuclear Weapons Issue* (Boulder Westview Press 1985) pp 45 65 and David S Yost, *France s Deterrent Posture and Security in Europe* Part I *Capabilities and Doctrine* (London IISS 1985) pp 13 28 These have been updated in light of recent changes in French planning

16 Laird, p 55 and Arkin and Fieldhouse, p 11

17 Quoted in Laird, p 48

18 Arkin and Fieldhouse p 59 IISS p 161 does not list the Buccaneer

19 See Eric J Grove Allied Nuclear Forces Complicate Negotiations *Bulletin of the Atomic Scientists* XLII No 6 (June/July 1986) p 20 who reports that Britain has 80 or so WE 177 tactical thermonuclear bombs *Jane s* notes that 220 Tornado GR1s have been ordered *Jane s All the World s Aircraft 1983 1984* (London Jane s 1984) p 117

20 Genéral Jeannou Lacaze La Politique militaire *Défense Nationale* November 1981 p 15

21 Laird, pp 52 53

22 The characteristics of the D 5 are described by Robert S Norris Counterforce at Sea The Trident II Missile *Arms Control Today* XV No 7 (September 1985) 5 10 CEP is a measure of accuracy defined by the radius of a circle within which 50 percent of missile warheads will fall

23 Freedman *Defense Analysis* p 94 Also Roy Dean The British Nuclear Deterrent and Arms Control *The World Today* September 1983 p 320

24 Quoted in Malone p 121

25 Freedman *Defense Analysis* pp 93 94

26 Malone p 35

27 Norris p 7

28 Eric J Grove estimates British French forces at about 26 percent of the West total but this calculation rests on a smaller U S Trident force than is likely to be available 304 Poseidon C 3 and 312 Trident C-4 launchers accounted for more than 5500 warheads in 1985 *IISS* p 158 Grove s estimates appear in his *Where and When? The Integration of British and French Nuclear Forces with the Arms Control Process* Faraday Discussion Paper No 5 (London Council for Arms Control 1985) p 21 See also Norris p 7

29 André Beaufre *Dissuasion et Strategie* pp 85 116

30For a critique of the British and French deterrents written from an American persepctive see George M Seignious and Jonathan Paul Yates Europe s Nuclear Superpowers *Foreign Policy* No 55 (Summer 1984) 40 53

31 There is a rich literature associated with the British nuclear program and its relation to the United States Margaret Gowing traces the British nuclear program in *Independence and Deterrence* (London Macmillan 1974) 2 vols Overviews of British policy include Andrew Pierre *Nuclear Politics The British Experience with an Independent Strategic Force* (London Oxford University Press 1972) John Simpson *The Independent Nuclear State The United States Britain and the Atom* (London Macmillan 1983) Lawrence Freedman *Britain and Nuclear Weapons* (London Royal Institute of International Affairs

1984) and Malone All include background bibliographies Simpson pp 244 262 includes useful appendices on early fissionable materials production and cooperative exchange with the United States

32 Christy Campbell *Nuclear Facts* (London Hamlyn 1984) p 165

33 *Ibid*

34 Freedman *Defense Analysis* pp 81 84

35 Gowing I 441

36 Malone p 58

37 *Ibid* pp 58 74

38 Quoted by William W Kaufmann *The McNamara Strategy* (New York Harper and Row 1964) p 117

39 Lawrence Freedman *Britain and Nuclear Weapons* p 17

40 Richard Neustadt, *Alliance Politics* (New York Columbia University Press 1970)

41 See the author s Nuclear Weapons in Search of a Role Evolution of Recent American Strategic Nuclear and Arms Control Policy in *Conflict and Arms Control An Uncertain Agenda* Paul Viotti ed (Boulder Westview 1986 pp 3 23

42 Norris p 7 (Emphasis added)

43 Malone p 78

44 Arkin and Fieldhouse pp 234 235

45 Freedman pp 87 88

46 *Ibid* p 94

47 *Ibid* p 96

48 That this was a problem from the start of the British nuclear force is spelled out in N J Wheeler

49 See for example Lawrence Schienman *Atomic Energy Policy in France under the Fourth Republic* (Princeton Princeton University Press 1965) Wilford L Kohl *French Nuclear Diplomacy* (Princeton Princeton University Press 1971) Wolf Mendl *Deterrence and Persuasion* (London Faber and Faber 1970) and the author s *French International Policy under De Gaulle and Pompidou The Politics of Grandeur* (Ithaca. Cornell University Press 1974) pp 69 175

50 Général Guy Méry Une Armée pour quoi faire et comment? *Defense Nationale* June 1976 p 15 Yost, I 1 64 and Laird, pp 67 88 summarize much of the debate over French strategy and identify its principal elements and problems See also the author s *Making and Marketing of Arms The French Experience and Its Implications for the International System* (Princeton Princeton University Press forthcoming) Chapter 2 This discussion is not interested in rehearsing this review but in underlining the greater independence of French nuclear forces relative to those of Great Britain whether viewed in terms of the disposition and control of capabilities or the definition of official doctrine

51 Valéry Giscard d'Estaing Allocution *Defense Nationale* July 1976 p 17 quoted in Yost I 9

52 France Ministère de la Défense *La Politique de defense de la France* Dossier d Information No 75 (October 1984) p 22

53 *Ibid*

54 *Ibid* p 23

55 Jeannou Lacaze *Defense Nationale* November 1981 p 15 Laird, pp 52 54 and 58 60 and Yost I 48 63 discuss France s projected tactical nuclear forces and the problems raised by their deployment.

56 Foreign Broadcast Information Service October 12 1982 p K3

57 *Ibid* December 19 1981 p K2

58 For Britain see the remarks of former Prime Minister Harold Wilson *The Labour Government 1964 1970* (London Weidenfeld and Nicolson and Michael Joseph 1979) pp 42 55 and Freedman *Britain and Nuclear Weapons* pp 25 131 132 for France see Yost, I 18 20 for a review of the trigger issue and Malone p 90

59 France Minister of Defense *France s Defense Policy* Information Bulletin No 69 May 1962 p 8

60 Statement of Roy Dean Director of the Arms Control and Disarmament Research Unit, Foreign and Commonwealth Office in *The World Today* September 1983 p 320

61 Quotes by Dean *ibid* p 321

62 Quoted in Yost II 53

63 See Dean and Yost, I 55 61

64 Foreign Broadcast Information Service July 8 1981 p K1 also Dean pp 319 322

65 Grove *Bulletin of the Atomic Scientists* makes this point, p 21

64 See *ibid* pp 18 23 *idem Where and When* pp 2 13 and Laird, pp 1-41

67 Grove *Bulletin* and *Where and When* and Yost, II 53

68 *Ibid* II 44

69 See the author s *Making and Marketing of Arms* Chapter 3

70 See the remarks of Charles Hernu Equilibre dissuasion volonté la voie étroite de la paix et de la liberté *Defense Nationale* December 1983 p 15

71 Malone p 113 also Simpson pp 169 175

72 This is the conclusion of Lawrence Freedman s analysis The Small Nuclear Powers in *Ballistic Missile Defense* Ashton B Carter and David N Schwartz eds (Washington D C Brookings 1984) pp 251 274

73 Even President Reagan s staunchest ABM supporters are reserved about claims that it will spare civilian populations It purportedly will be able to protect vulnerable American nuclear systems By complicating enemy calculations it is alleged that deterrence will be reinforced. See the essay by Gerald Yonas The Strategic Defense Initiative *Weapons in Space* pp 73 90

74 Speech of Sir Geoffrey Howe March 14 1985 London Press Service Washington D C p 7

75 *Ibid*

76 *Ibid* p 8

77 France Assemblée Nationale Commission de la Défense Nationale et des Forces Armées *Projet de loi portant approbation de la programmation militaire pour les annees 1984 1988* No 1485 May 1983 p 91

78 For additional discussion of the impact of SDI on alliance cohesion see the author s SDI Alliance Cohesion and East West Nuclear Stability in *Rethinking the Nuclear Weapons Dilemma in Europe* Frank Barnsby and P Terrence Hopmann eds (London Macmillan 1986 forthcoming)

79 Howe pp 3-4

80 *Times* (London) December 10 1985

81 See the Labour Party *Defence and Security for Britain* Statement to Annual Conference 1984 by the Executive Committee Relevant as background is Lawrence Freedman Britain The First Ex Nuclear Power? *International Security* VI No 2 (Fall 1981) 80 104 For a brief review of the opposition positions see Grove *Where and When* pp 13 14 and Dan Keohane British Approaches to Nuclear Arms Control and Disarmament, *Arms Control* VI No 1 (May 1985) 58 81

82 Grove *Where and When* pp 14 15 See also Jonathan Alford, The Place of British and French Nuclear Weapons in Arms Control *International Affairs* LIX No 4 (Autumn 1983)

83 Dean p 320

84 See Strobe Talbott, pp 185 190 and *passim*

85 Arkin and Fieldhouse P 13 ff

86 Laird, p 55

87 See Chapter 2 of the author s *Making and Marketing Arms*

88 *Ibid* Chapter 3